

IN THE CLAIMS:

The text of all pending claims, (including withdrawn claims) is set forth below. Cancelled and not entered claims are indicated with claim number and status only. The claims as listed below show added text with underlining and deleted text with ~~strikethrough~~. The status of each claim is indicated with one of (original), (currently amended), (cancelled), (withdrawn), (new), (previously presented), or (not entered).

Please ADD claims 42-46 and CANCEL claims 1, 8-16, 19, 20, 33, 36 and 37 without prejudice or disclaimer in accordance with the following:

1-37. (Cancelled)

38. (Previously Presented) A lithium-sulfur battery comprising:

a negative electrode including a negative active material selected from the group consisting of materials in which lithium intercalation reversibly occurs, a lithium alloy, and a lithium metal;

a positive electrode including a positive active material comprising at least one sulfur-based compound selected from the group consisting of elemental sulfur and organosulfur compounds, and an electrically conductive material; and

an electrolyte including a sulfur-containing electrolyte salt and mixed organic solvents;

the mixed organic solvents consist of a weak polar solvent, first and second strong polar solvents, and a lithium protection solvent,

wherein the weak polar solvent consists of dimethoxyethane, the first strong polar solvent consists of sulfolane, the second strong polar solvent consists of dimethylsulfoxide, and the lithium protection solvent consists of 1,3-dioxolane, and

a volume ratio of the weak polar solvent to the first strong polar solvent to the second strong polar solvent to the lithium protection solvent is 20:16:4:10.

39. (Previously Presented) A lithium-sulfur battery comprising:

a negative electrode including a negative active material selected from the group consisting of materials in which lithium intercalation reversibly occurs, a lithium alloy, and a

lithium metal;

a positive electrode including a positive active material comprising at least one sulfur-based compound selected from the group consisting of elemental sulfur and organosulfur compounds, and an electrically conductive material; and

an electrolyte including a sulfur-containing electrolyte salt and mixed organic solvents;

the mixed organic solvents consist of first and second weak polar solvents, a strong polar solvent, and a lithium protection solvent,

wherein the first weak polar solvent consists of dimethoxyethane, the second weak polar solvent consists of methyltetrahydrofuran, the strong polar solvent consists of sulfolane, and the lithium protection solvent consists of 1,3-dioxolane, and

a volume ratio of the first weak polar solvent to the second weak polar solvent to the strong polar solvent to the lithium protection solvent is 16:4:20:10.

40. **(Previously Presented)** A lithium-sulfur battery comprising:

a negative electrode including a negative active material selected from the group consisting of materials in which lithium intercalation reversibly occurs, a lithium alloy, and a lithium metal;

a positive electrode including a positive active material comprising at least one sulfur-based compound selected from the group consisting of elemental sulfur and organosulfur compounds, and an electrically conductive material; and

an electrolyte including a sulfur-containing electrolyte salt and mixed organic solvents;

the mixed organic solvents consists of a weak polar solvent, a strong polar solvent, and first and second lithium protection solvents,

wherein the weak polar solvent consists of dimethoxyethane, the first lithium protection solvent consists of 3,5-dimethylisoxazole, the strong polar solvent consists of sulfolane, and the second lithium protection solvent consists of 1,3-dioxolane, and

a volume ratio of the weak polar solvent to the first lithium protection solvent to the strong polar solvent to the second lithium protection solvent is 4:1:4:1.

41. **(Previously Presented)** A lithium-sulfur battery comprising:

a negative electrode including a negative active material selected from the group consisting of materials in which lithium intercalation reversibly occurs, a lithium alloy, and a lithium metal;

a positive electrode including a positive active material comprising at least one sulfur-based compound selected from the group consisting of elemental sulfur and organosulfur compounds, and an electrically conductive material; and

an electrolyte including a sulfur-containing electrolyte salt and mixed organic solvents;

the mixed organic solvents consist of first and second weak polar solvents, a strong polar solvent, and a lithium protection solvent,

wherein the first weak polar solvent consists of dimethoxyethane, the second weak polar solvent consists of diglyme, the strong polar solvent consists of sulfolane, and the lithium protection solvent consists of 1,3-dioxolane, and

a volume ratio of the first weak polar solvent to the second weak polar solvent to the strong polar solvent to the lithium protection solvent is 2:2:1:5.

42. **(New)** The lithium-sulfur battery according to claim 41, wherein the sulfur-containing electrolyte salt is lithium trifluoromethane sulfonimide.

43. **(New)** The lithium-sulfur battery according to claim 41, wherein the positive electrode further comprises at least one additive selected from the group consisting of a transition metal, a Group IIIA element, a Group IVA element, a sulfur compound thereof, and an alloy thereof.

44. **(New)** The lithium-sulfur battery according to claim 43, wherein the positive electrode further comprises a transition metal selected from the group consisting of Sc, Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Y, Zr, Nb, Mo, Tc, Ru, Rh, Pd, Ag, Cd, Ta, W, Re, Os, Ir, Pt, Au and Hg.

45. **(New)** The lithium-sulfur battery according to claim 43, wherein the positive electrode further comprises a Group IIIA element selected from the group consisting of Al, Ga, In and Tl.

46. **(New)** The lithium-sulfur battery according to claim 43, wherein the positive electrode further comprises a Group IVA element selected from the group consisting of Si, Ge, Sn and Pb